

Canadian Light Source

Procedure Style Guide

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Signature

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REVISION HISTORY

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1.0 INTRODUCTION

1.1 DOCUMENT PURPOSE

This document specifies guidance to be applied in the preparation of procedures for Canadian Light Source (CLS).

1.2 RATIONALE

A procedure is a set of written instructions that explains how to perform a task. For example, a procedure:

- Specifies the preferred manner in which a task is to be performed,
- Provides task guidance information directly in the workplace,
- Promotes the standardization of task actions applied across a group of workers with variations in training and experience,
- Can provide a record of actions taken in each instance of procedure application, and
- Can reduce the opportunity for errors in task performance.

Some of the benefits of applying procedure preparation guidance include:

1. Simplification of procedure preparation and review effort,
2. Promotes the standardization of task actions applied across a group of workers with variations in training and experience,
3. Reduced complexity and improved staff understanding of project procedures, and
4. Reduced procedure training effort.

1.3 APPLICABILITY

This guidance will apply to the following types of procedures prepared by CLS staff:

- Commissioning and Operations,
- Maintenance, Inspection and Calibration,
- Health, Safety and Environment,
- Engineering,
- Assembly and Test,
- Administrative and financial processing, and
- Users.

This guidance will not necessarily apply to procedures supplied by equipment vendors as part of equipment purchases. For example, vendor equipment procedures that are generic and were developed prior to CLS purchase will not be re-written to be consistent with CLS procedure

guidance unless there is an identified need to do so. Vendors who are preparing equipment procedures that are specific to CLS application will be asked to prepare procedures in compliance with the guidance of this document.

1.4 GUIDANCE BASIS

The recommendations embodied in this Style Guide were developed and drawn from three sources:

- An understanding of CLS needs for procedure content,
- Proven principles and practices in procedure writing as outlined in 'Procedure Writing - Principles and Practice' and 'The Industrial Operator's Handbook - A Systematic Approach to Industrial Operations', and
- CLS team member experience and consensus.

2.0 INFORMATION CONTENTS

This section describes the information features to be contained in CLS procedure documents. Three types of information features are discussed:

- Procedure Document Specific Information Content:
 - Required
 - Optional
- Generic CLS Document features.

This section focuses on a description of Procedure Document Specific information content. 'Required' features are information that is essential for each procedure. 'Optional' features are types of information that the procedure author may or may not include depending on its applicability to the procedure being prepared. All features discussed are considered as 'Required' unless specifically identified as 'Optional'.

Generic CLS Document features are information elements that are common to all CLS project documents (e.g., logos, CLS address). The purpose and need for these information elements will not be discussed in this report.

For reference purposes, readers are referred to the 'CLS Procedure Template' document in Appendix A that illustrates the preferred organization, form (e.g., Font size and emphasis) and implementation (e.g., page location placement) of procedure document information features as identified in the following sections.

2.1 IDENTIFICATION AND ORGANIZATION

2.1.1 Cover Page

The procedure document Cover page shall contain the following information features:

- Procedure Name
- Numerical Identity - the document number
- Revision Number
- Issue Date

- Signatures:
 - Author name - Date
 - Reviewer name(s) - Date
 - Approver name - Date

2.1.2 Revision History Page

The procedure document Revision History page shall contain a table with the following information features with one entry per revision:

- Revision number
- Date
- Description of changes
- Author name

2.1.3 Page Header

The Page Header of all procedure pages except for the Cover page shall contain the following information features:

- Procedure Name
- Numerical Identify
- Revision Number

The Page Header for the Cover page shall be blank.

2.1.4 Page Footer

The Page Footer of all procedure pages except for the Cover page shall contain the following information features:

- Page number
- Page total

All procedure document pages shall be numbered consecutively beginning with the Cover page.

The Page Footer for the Cover page shall be blank.

2.1.5 Table of Contents

OPTIONAL - The Table of Contents shall list the sections of the procedure document and the page numbers where they can be found.

A Table of Contents is generally not required for small procedure documents of < 10 pages.

A Table of Contents should generally be provided for procedure documents of > 10 pages.

2.2 APPLICABILITY

2.2.1 Purpose

The Purpose section shall state the objective(s) of the procedure.

2.2.2 Background

OPTIONAL - The Background section shall provide additional information or explanation that will help the procedure user understand the purpose and rationale for performing the procedure.

2.2.3 Application Requirements

OPTIONAL - The information elements in this section outline additional required information that specifies when and how the procedure is to be performed. Authors of procedures should consider the need for inclusion of each information element on a case-by-case basis.

The common information elements for consideration include:

1. Context

This section shall describe the operating or maintenance context(s) that are permissible for performing the procedure (e.g., operating modes, equipment states, operational strategies, or staffing complements).

2. Personnel Qualification

This section shall state any qualifications that specify the training or experience required for performing the procedure.

3. Supervision & Verification

This section shall state any requirements for supervision of procedure performance and any requirements for verification of procedure actions (e.g., self-check, independent verification).

4. General Precautions, Limitations and Constraints

This section shall list the any precautions, limitations and constraints that the person performing the procedure should be aware of in order to:

- Maintain personnel safety,
- Prevent equipment upset or damage, or
- Perform work in the most effective manner.

5. Prerequisites

This section shall describe any actions that need to be performed or any equipment states that need to be established before the procedure should be begun.

6. Personnel Protection Equipment

This section shall identify any protective equipment that should be worn during performance of the procedure.

7. Equipment, Material and Supplies

This section shall list the equipment, materials and supplies that are required to support performance of the procedure (e.g., test instruments, tools, replacement parts).

8. Termination Criteria

This section shall identify the situations or parameter states/values that require the interruption of procedure actions prior to completion, and notification of supervision for direction on how to further proceed.

2.3 REFERENCE MATERIAL

2.3.1 Glossary

OPTIONAL - This section shall list the meaning of definitions, acronyms and abbreviations that are used within the procedure.

2.3.2 Supporting Documents

OPTIONAL - This section shall list the documents that provide additional information to understand the procedure or equipment operation, or that are referenced within the procedure actions, for example:

- Licenses and permits,
- Equipment requirements,
- Industry codes and standards,
- Specifications,

- Flowcharts,
- Supplier manuals,
- CLS policies, or
- Other CLS procedures, manuals or documentation.

2.4 PROCEDURE AND POLICIES

This section shall list the actions of the procedure. Specific guidance on the organization and representation of procedure actions and supplementary information is provided in Section 3.

2.5 ATTACHMENTS / FORMS

OPTIONAL - This section shall provide user aids to assist in performing the procedure, for example:

- Record sheets for:
 - Measurements
 - Observations
- Decision Aids such as:
 - Graphs
 - Tables
 - Photographs
 - Calculation templates
 - Forms (to be completed at the end of the procedure).

3.0 PREFERRED PRACTICE

This section outlines the preferred manner for representing the actions of a procedure. The preferred procedure features are specified by statements of principles and illustrated by examples.

The rationale for the application of specific information features can be found in the primary reference - 'Procedure Writing - Principles and Practices'. Where the chosen CLS practice differs from the practice outlined in 'Procedure Writing - Principles and Practices' the justification for the change will be described.

For the balance of this document, statement of principles, explanations of rationale, and supplementary text are shown in Size 11 font. All feature examples are illustrated in Size 12 font for differentiation and to maintain consistency with procedure legibility guidelines.

3.1 CONTENT DETAIL

Principle

- Level of Detail - Provide the information that the procedure user needs to perform the task and no more.

In determining the amount of detail to provide, consider the following user and task factors:

- User:
 - Education,
 - Task training, and
 - Task familiarity and experience.
- Task:
 - Importance,
 - Frequency of performance,
 - Safety hazards and environmental impacts,
 - Potential for user error, and
 - Consequence and severity of user error.

3.2 FEATURES AND ORGANIZATION

3.2.1 Organization of Actions

Principles

- Grouping - Group procedure actions by individuals performing common tasks. In general try to achieve < 10 actions per task. This enables all actions for a common task to be represented on a single page.
- Organization - List tasks and actions within tasks sequentially according to the order that they should be performed.
- Task Identification - All tasks should be identified using a CLS document heading style format to assist in identification.
- Numbering - Tasks will be numbered automatically through the use of CLS document heading style formats. Within a task, individual actions should be numbered sequentially.

Examples

4. PROCEDURE

4.1 TASK 1 NAME

4.1.1 Action 1 name

4.1.2 Action 2 name

4.1.3 Action 3 name

4.2 TASK 2 NAME

4.2.1 Action 1 name

4.2.2 Action 2 name

3.2.2 Legibility

Principles - Format and Spacing

- Task Headings:
 - Format - Apply appropriate CLS document heading style.
 - Spacing - Provide one space line before and after task headings to improve readability.
- Actions:
 - Placement - Indent actions one tab to the right from the corresponding task heading.
 - Spacing - Insert one space line between adjacent task actions.

Examples

Refer to the example application for Organization of Actions in Section 3.2.1.

Principles - Legibility - Type Size

- Minimum Discrimination Criteria - To successfully recognize and discriminate between two objects the same size, the objects must subtend a visual angle $\Phi \geq 5$ min, under ideal conditions (e.g. observers with 20/20 visual acuity and sufficient illumination).

Consequently, objects must be visually increased in size to maintain observer recognition and discrimination performance as the distance between the object and observer increases (see Figure 1).

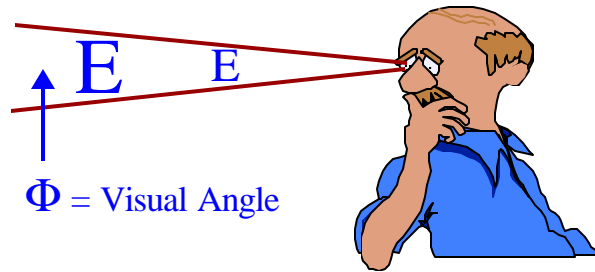


Figure 1 - Discrimination Criteria Expressed in Terms of Visual Angle

- Design Margin - To ensure a high accuracy and repeatability in recognition and discrimination performance across a range of observers, objects should be at least 2.5 to 4.0 times the minimum size as defined by a visual angle of $\Phi \geq 5$ min.
- Type Size Selection - Use a type size of 12 points or greater to assure a high accuracy and repeatability in recognition of text and numerical information comprising a procedure.

The selection of a 12 point type size accommodates the following representative procedure usage conditions:

- Distance of 0.5 m between procedure and reader.
- Illumination of 320 lux.
- Observer visual acuity of 20/30 or better.
- Design margin of 3 to 4 to promote accurate and repeatable recognition and discrimination.

3.2.3 General Representation of Actions

Principles

- Active voice - Represent action statements as 'imperative' or 'command' type statements.
- Syntax - Structure actions with a Verb...Object statement order.
- Single action per step - Limit each action statement to a description of a single action. To represent multiple actions employ multiple action statements or lists.
- Short sentences - Keep action statements short to improve readability. Provide additional information in separate supplementary statements.
- Object identification - Identify the object(s) of an action by both device name and equipment identify reference.
- Performance criteria - Provide criteria that specifies a point when the action is successfully completed.

- Positive expression - Express actions as positive statements to minimize the potential for user misunderstanding.

Examples

1. Open drain valve V23.
2. Increase coolant tank T6 level to 5.0 m.
3. Record modulator heat exchanger HX3 temperature.

3.2.4 Conditional Actions

Conditional actions are procedure actions that are to be performed only if the specified condition is found to be true. If the specified condition is found to be false, the accompanying action is not performed.

Principles

- Syntax - Structure conditional actions with a Condition...Action statement order.
- Construct - Apply a standard IF (condition)...THEN (action) notation to promote identification of conditional statements by users.
- Conjunctions:
 - Signify the linkage between related conditions by using AND or OR conjunctions.
 - Avoid mixing AND and OR conjunctions in the same conditional statement. Construct to minimize risk of user interpretation error.
- Visual Emphasis - Capitalize IF...THEN constructs and all conjunctions to assist in their identification.
- Condition Spacing - Space adjacent conditions and conjunctions a half line apart.

- Logic Tables - Use a logic table to simplify the representation of conditional statements with three or more condition or action alternatives.

Logic tables provide a means to specify and represent all conditions and action options in a simpler form than through the use of multiple conditional statements.

- Logic Table Spacing - Space adjacent logic table row entries a half line apart.

Example - Conditional Statement

1. IF Coolant flow < 0.3 kg/s
OR
Filter in-service duration > 2 years

THEN Clean filter.

Example - Logic Table

1. Align coolant valves:

	MSV-1	MSV-2	MSV-3
For startup	Open	Open	Closed
For operation	Closed	Closed	Open
For shutdown	Closed	Closed	50% Open

3.2.5 Use of Negatives

Principles

- Usage - Avoid the use of 'not' or 'NOT' in any action statement. Restate the action as a positive statement.

Statements containing 'not' or 'NOT':

- Take longer to comprehend, and
- Are more prone to interpretation error.

Example

Avoid:

1. Confirm isolation valve V4 not open.

Preferred:

1. Confirm isolation valve V4 closed.

3.2.6 Continuing Actions

Continuing actions are procedure actions that are to be repeated on a periodic basis while other procedure actions are performed. Continuing actions are initiated and maintained as long as the specified condition is true or until terminated by a subsequent procedure action.

Principles

- Syntax - Structure continuing actions with a Condition...Action statement order.
- Construct - Apply a standard FOR (condition)...REPETITIVELY (action) notation to promote identification of continuing statements by users.
- Conjunctions:
 - Signify the linkage between related conditions by using AND or OR conjunctions.
 - Avoid mixing AND and OR conjunctions in the same continuing statement construct to minimize risk of user interpretation error.
- Visual Emphasis - Capitalize FOR...REPETITIVELY constructs and all conjunctions to assist in their identification.
- Condition Spacing - Space adjacent conditions and conjunctions a half line apart.

Example

1. FOR Startup mode
OR
During cooling system servicing

REPETITIVELY Monitor

- HX3 temperature T1
- Coolant flow F2
- Pump P1 vibration V4

3.2.7 Lists

Principles

- Usage - Employ lists to simplify multiple item expression and improve user interpretation and tracking of multiple items. Number each list entry, if appropriate to do so.
- Spacing - Space adjacent list elements a half line apart.

Examples

1. Verify isolation valves closed:
 - V14
 - V24
 - V34
2. Clean filter F3:
 1. Remove end plate
 2. Drain coolant
 3. Remove filter element
 4. Backwash filter

3.2.8 Numerical Information

Principles

- Form:
 - Use Arabic numbers rather than words or Roman numerals to simplify user interpretation.
 - Permissible exceptions - Where adjacent numbers in a statement have different meanings use a number word to represent the number of items (e.g., One 4 kv transformer).

- Precision Consistency - Match the precision of numeric values expressed in procedures with the precision of numeric indications available in instrumentation and equipment interfaces.
- Units - Provide units for all numeric values in procedures.
- Representation of limits - Represent acceptable limits for numeric values through ranges rather than percentage error bands.

Ranges specify the limits to numeric values without need of user calculation. Use of percentage error bands creates a secondary task for users requiring a calculation of the corresponding numeric limit values.

- Calculations - Minimize the need for user calculation of numeric values or provide calculation aids.

Examples

1. Start 2 coolant pumps.
2. IF Coolant temperature is between 25°C to 30°C
THEN Open access door.

3.2.9 Alert Messages

Alert messages provide forewarning of specific hazards that may be encountered in procedure execution. Four types of alert messages can be used in CLS procedures. The designation of each type of alert message and their meaning are:

- Alerts for Hazards to People:
 - DANGER - High risk of severe injury or death.
 - WARNING - Some risk of severe injury or death.
 - CAUTION - Risk of minor injury.
- Alerts for Hazards to Equipment or Processes:
 - ATTENTION - Risk of damage or upset.

The choice of terms for alert messages to hazards to people have been chosen to be consistent with the alert terms used in CLS facility signage specified in the Health, Safety and Environmental program.

Principles

- Syntax - Structure alert messages with an Alert...Hazard...Consequence statement order.
- Location:

- Place alert messages immediately before the action statement to which they apply.
- Ensure alert messages and the corresponding action statement are placed on the same page.
- Content:
 - Limit each alert message to forewarning of a single hazard and consequence.
 - Use multiple alert messages to provide forewarning to multiple hazards.
- Visual Emphasis - Capitalize and bold all letters of the alert message term to promote ready user recognition.
- Usage - Use alert messages sparingly - only where justified, to foster user attention to alert messages when they are encountered.

Examples

1. **DANGER** - Do not open access panel. Exposed high voltage terminals inside cabinet.

ATTENTION - Do not operate motor when coolant flow < 3 l/min. Increased risk of excessive bearing wear.

Adjust coolant flow to achieve a bearing temperature < 35°C.

3.2.10 Notes

Notes present additional information that is useful to users in performing a procedure action.

Principles

- Syntax - Structure notes with a Note...Description statement order.
- Location:
 - Supplemental information - Place the note immediately after the action statement to which it applies.
 - Conditional information - Place the note after any Alert messages and immediately before the action statement to which it applies.
 - Ensure notes and the corresponding action statement are placed on the same page.
- Content:
 - Limit each note to a description of a single type of information.

- Use multiple notes to describe multiple types of information.
- Visual Emphasis - Capitalize and bold the note message term to promote ready user recognition.

Example

1. Adjust coolant flow to achieve a bearing temperature of < 35°C.

Note - Five minutes are required for bearing temperature to stabilize after coolant flow adjustments.

3.2.11 Decision Aids

Principles

- Usage - Provide decision aids to reduce user dependence on:
 - Memory recall,
 - Calculations, or
 - Reasoning.
- Location:
 - Small Aids - Place the decision aid immediately after the corresponding action statement.
 - Large Aids - Place the decision aid as an attachment to the procedure and reference its location immediately after the corresponding action statement as a note.

Examples

- Calculations - Provide placeholders to record intermediate values.
- Calibration - Provide an operating region map defining acceptable limits to equipment operations.
- Inspection - Provide sample defect photographs.

3.2.12 Observations and Measurements

Principles

- Usage - Provide space for users to record observations and measurements identified in the procedure.
- Location:

- Small observations or measurements - Place the recording space after the action statement and any notes.
- Large observations or measurements - Place the recording space as an attachment to the procedure and reference its location immediately after the corresponding action statement as a note.
- Precision - Specify the precision with which observations should be recorded.

Examples

1. Record coolant flow.

- Coolant flow _____ kg/min - Precision 00.0 kg/min

2. Monitor conditions:

- Coolant flow F2
- Pump P1 vibration V4

Note - Use attached record sheet.

Sample record sheet:

Monitor Conditions - Step 4.3 - 2.

Time (hh.mm)	Coolant Flow F2 (kg/min)	Pump P1 Vibration V4 (μ m)
00:00	00.0	0

3.2.13 Placekeeping

Placekeeping provides notation space for procedure users to:

- Informally track procedure progress, or
- Formally initial action completion for verification record purposes.

Principles

- Usage:
 - Provide placekeeping notation space for each procedure action.
 - For statements that specify action on several items, provide placekeeping notation space for each item.
- Location - Place notation space on the right side of the page in a single column.
- Linkage - To assist users in associating actions or items with the corresponding notation space consider using a leader to provide a visual alignment link.

Examples

1. Start 2 coolant pumps....._____
2. Verify isolation valves closed:
 - V14....._____
 - V24....._____
 - V34....._____

3.2.14 Navigation - Cross Referencing

Principles

- Cross-referencing:
 - Within the current task - Reference actions by numerical identify.
 - Outside the current task - Reference actions by task numeric heading and action numerical identify.

Examples

Within current task referencing:

1. Go to Step 4.
2. IF Startup mode is complete
THEN Go to Step 6.

Outside of current task referencing:

3. Go to Step 4.6 - 3.

3.3 VOCABULARY

3.3.1 Action Verbs

Principles

- Choice:
 - Use simple short verbs to simplify user recognition and understanding.
 - Avoid verb pairings that are easily misunderstood (e.g. increase...decrease).
 - Limit verb selection to those verbs from a standard list with defined meanings.

A list of preferred verbs and their meanings is provided in Table 1.

Examples

1. Open door D5.
2. Start motor

Avoid:

- Increase...decrease

Prefer:

- Increase...reduce or Raise...lower

Table 1 - List of Verb Categories and Meanings

Category	Verb	Meaning
Perception	Check	Note a condition and compare it to a requirement
	Ensure	Make certain a specific requirement is met
	Identify	Verify equipment identity or state
	Inspect	Evaluate the condition of
	Listen	Attend to an audible stimulus
	Monitor	Check repeatedly
	Supervise	Monitor the performance of assigned actions by others
	Verify	Observe that a specific characteristic or condition exists
Reasoning & Decision-making	Assess	Examine a situation and make a judgment
	Calculate	Perform a numerical operation
	Compare	Determine the similarities or differences between two or more objects or conditions
	Complete	Accomplish or finish a specific requirement
	Determine	Evaluate using a decision aid (e.g., graph, formula, table)
	Review	Become familiar with
	Select	Choose from among a number of alternatives
Actions - Control	Adjust	Make minor changes to
	Allow	Let something happen without interference
	Block	Inhibit an action possibility
	Bypass	Route around
	Close	Change a device position to prevent mass, energy or information flow
	Cool-down	Lower the temperature of
	Control	Operate to satisfy specific requirements
	Co-ordinate	Arrange parallel actions
	Depress	Push in
	Energize	Supply electrical energy
	Equalize	Balance the values of two or more parameters
	Establish	Make arrangements for a stated condition
	Get	Obtain something
	Initiate	Begin

Table 1 - List of Verb Categories and Meanings (Continued)

Category	Verb	Meaning
Actions - Control (continued)	Isolate	Separate equipment from flows of mass, energy or information
	Lower	Decrease or reduce
	Maintain	Control a parameter to a reference value or setpoint
	Maximize	Make as large as possible
	Minimize	Make as small as possible
	Open	Change a device position to allow mass, energy or information flow
	Place	Move a control or object to specified position
	Prepare	Get ready to do something
	Raise	Increase
	Reduce	Make smaller
	Poise	Place a protective device in an enabled and un-actuated state
	Restore	Return to a previously defined condition
	Rotate	Turn a control or object radially
	Sample	Remove a representative portion of an item for examination or analysis
	Secure	Lock
	Set	Adjust a parameter to a specified value
	Shutdown	Remove equipment from an operating state
	Start	Initiate equipment operation
	Stop	Terminate equipment operation
	Take	Obtain or get hold of
	Throttle	Close a valve to an intermediate position to obtain a desired flow or running condition
	Transfer	Move objects, mass, energy or information from one location to another
	Trip	Manually cause a protective function to actuate
	Warm-up	Raise the temperature of
Actions - Delegation	Assign	Allocate procedure actions to another individual
	Dispatch	Send an individual to perform identified actions
Actions - Linkage	Continue	Go on with a particular action
	Go to	Proceed to a specified action
	Refer	Use another document for guidance

Table 1 - List of Verb Categories and Meanings (Concluded)

Category	Verb	Meaning
Action - Communication - Verbal	Ask	Request information
	Instruct	Explain to a person how to do identified actions
	Notify	Tell formally or officially
	Tell	Inform a person about a specific condition
	Warn	Tell someone about a hazard and consequence
Action - Communication - Written	Record	Write down

3.3.2 Abbreviations, Acronyms and Initializations

Abbreviations, acronyms and initializations provide shortened means for stating the names of objects or terms:

- Abbreviations are a shortened version of single words.
- Acronyms are shortened versions of a word group that are formed using the first letter of each word of the group and are pronounced as a new word.
- Initializations are shortened versions of a word group that is formed using the first letter of each word of the group and are pronounced using each letter of the initialization.

Principles

- Usage:
 - Limit usage since abbreviations, acronyms and initializations all require increased user mental effort for interpretation.
 - Use terms from a standard list with unique and defined meanings.

A list of standardized abbreviations, acronyms and initializations adopted for project usage is located in the Project Implementation Manual Section 1.5.

Examples

Abbreviations:

- m - Metre
- HX - heat exchanger
- HS - handswitch

- Lvl - level

Acronyms:

- ALARA - As low as reasonably achievable
- DEL - derived emission limit

Initializations:

- CLS - Canadian Light Source
- CNSC - Canadian Nuclear Safety Commission
- CR - control room

4.0 REFERENCES

1. Wieringa, D, Moore, C., and Barnes, V., Procedure Writing: Principles and Practices, Batelle Press, 1999.
2. Howlett, H., The Industrial Operator's Handbook - A Systematic Approach to Industrial Operations, Techstar Publications, 1995.

5.0 APPENDIX A - PROCEDURE TEMPLATE

Canadian Light Source

Procedure Name

Technical Document x.x.x.x Rev. A

Date

Signature

Date

Prepared by: _____
Name

Reviewed by: _____
Name

Reviewed by: _____
Name

Approved by: _____
Name

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REVISION HISTORY

<i>Revision</i>	<i>Date</i>	<i>Description</i>	<i>Author</i>
Number	Date	Description of change.	Name

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1.0 PURPOSE

State the objective(s) of the procedure.

2.0 BACKGROUND

OPTIONAL - Provide additional information or explanation that will help the procedure user understand the purpose and rationale for performing the procedure.

3.0 APPLICATION REQUIREMENTS

3.1 CONTEXT

OPTIONAL - Describe the operating or maintenance context(s) that are permissible for performing the procedure (e.g. operating modes, equipment states, operational strategies, staffing complements).

3.2 PERSONNEL QUALIFICATION

OPTIONAL - State any qualifications that specify the training or experience required for performing the procedure.

3.3 SUPERVISION & VERIFICATION

OPTIONAL - State any requirements for supervision of procedure performance and any requirements for verification of procedure actions (e.g., self-check, independent verification).

3.4 GENERAL PRECAUTIONS, LIMITATIONS AND CONSTRAINTS

OPTIONAL - List the any precautions, limitations and constraints that the person performing the procedure should be aware of in order to:

- Maintain personnel safety,
- Prevent equipment upset or damage, and
- Perform work in the most effective manner.

3.5 PREREQUISITES

OPTIONAL - Describe any actions that need to be performed or any equipment states that need to be established before the procedure should be begun.

3.6 PERSONNEL PROTECTION EQUIPMENT

OPTIONAL - Identify any protective equipment that should be worn during performance of the procedure.

3.7 EQUIPMENT, MATERIALS AND SUPPLIES

OPTIONAL - List the equipment, materials and supplies that are required to support performance of the procedure (e.g., test instruments, tools, replacement parts).

3.8 TERMINATION CRITERIA

OPTIONAL - Identify the situations or parameter states/values that require the interruption of procedure actions prior to completion, and notification of supervision for direction on how to further proceed.

4.0 REFERENCE MATERIAL

4.1 GLOSSARY

OPTIONAL - List the meaning of definitions, acronyms and abbreviations that are used within the procedure and are not explained within the master Glossary of the CLS Project Implementation Manual.

4.2 SUPPORTING DOCUMENTS

OPTIONAL - List the documents that provide additional information to understand the procedure or equipment operation (e.g., equipment requirements, industry codes) or that are referenced within the procedure actions (e.g., specifications, flowsheets, supplier manuals, CLS policies).

5.0 PROCEDURE

Group procedure actions into tasks.

Organize tasks hierarchically and sequentially.

List individual procedure actions sequentially within each task.

5.1 NAME OF TASK 1

5.1.1 Name of Action 1 _____

5.1.2 Name of Action 2 _____

5.1.3 Name of Action 3 _____

5.1.4 Name of Action 4 _____

5.2 NAME OF TASK 2

5.2.1 Name of Action 1 _____

5.2.2 **DANGER** - Do not open access panel. High voltage inside cabinet.

Name of Action 2 _____

Note - Five minutes are required for bearing temperature to stabilize after coolant flow adjustment.

5.2.3 IF Coolant flow is < 0.3 kg/s

OR

Filter age is > 2 years

THEN Clean filter F3. _____

5.2.4 Name of Action 4 _____

6.0 ATTACHMENTS

OPTIONAL - Provide user aids to assist in performing the procedure (e.g., forms, tables, graphs, photographs, checklists, or calculation templates).